

U.S. Coast Guard Research & Development Center's List of Recently Released Products and Reports

Title:

CREW ENDURANCE MANAGEMENT SYSTEM (CEMS)

This software program is designed to help Coast Guard units apply the concepts and processes of the Coast Guard Crew Endurance Management (CG CEM) program toward managing endurance risk factors in Coast Guard operational environments.

The "Crew Endurance Management System" provides strategies to implement the following process:

- Establish a foundation for crew endurance program implementation
- Conduct CE risk-factor assessments
- Develop a CE plan to control identify CE risk factors
- Implement the CE plan Re-assess the CE plan

This software product may be available on the Coast Guard's Crew Endurance Management website at <http://www.uscg.mil/hq/gm/cems/>.

Title:	Report Number:	Accession Number:
<u>User Evaluation of the Tactical Ballistic Survival System (TBSS) for the Enhanced Maritime Safety and Security Team</u>	R&DC 735	

Added Homeland Security responsibilities taken on by the Coast Guard expose boarding teams to more lethal threat environments. To provide added protection for boarding teams in these environments, the Coast Guard tasked the Natick Soldier Center (NSC) to develop a ballistic vest ensemble. NSC developed the Tactical Ballistic Survival System (TBSS), a system consisting of two configurable load carrying vests with ballistic protection, an equipment belt, flotation devices, and emergency breathing apparatus.

Title:	Report Number:	Accession Number:
<u>NSMRL SEE/RESCUE® PROJECT TARGET DETECTABILITY TESTING, MODELING, AND ANALYSIS</u>	R&DC 717	

The Coast Guard (CG) Research and Development Center (RDC), funded by the Naval Submarine Medical Research Laboratory (NSMRL), evaluated the detectability of the See/Rescue® (S-R) streamer distress signal device in scenarios relevant to Navy search and rescue operations using data collected during two sea test exercises.

Title:	Report Number:	Accession Number:
<u>Integration of Coastal Ocean Dynamics Application Radar (CODAR) and Short-Term Predictive System (STPS) Surface Current Estimates into the Search and Rescue Optimal Planning System (SAROPS)</u>	R&DC 671	

The CODAR-based surface current prediction model (Short-Term Predictive System – STPS) previously demonstrated in Block Island Sound was extended to an existing long-range CODAR area in the Middle Atlantic Bight (MAB) and upgraded to incorporate the effects of wind forcing. Signal processing and data reduction refinements were also incorporated in the CODAR scheme.

Title:	Report Number:	Accession Number:
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Development of Methods for Biological Injection and Sampling from Fluid Lines	R&DC 662	
A critical factor in providing consistent and accurate organism loads to test ballast water treatment equipment is the injection of surrogate organisms. Additionally, it is necessary to acquire representative samples from flowing pipes to assess the treatment's effects on the number and viability of organisms. As a result of the interaction between mechanical processes and living organisms, there are inevitably both mortality and recovery issues. The current document presents data and a discussion regarding the design, construction, operation and relative performance of various types of pumps for inserting Artemia into flowing seawater pipes eight inches in diameter.		
Title:	Report Number:	Accession Number:
LEEWAY DIVERGENCE	CG-D-05-05	ADA435435
Understanding leeway divergence is key to accurately determining maritime search areas. The downwind and crosswind components of leeway drift as a function of wind speed have been reported on in the literature for 23 categories of leeway drift objects. Two additional leeway drift object categories were analyzed in this report. The optimal relationships between downwind and crosswind components of leeway coefficients and leeway speed and divergence angle values are derived empirically using the 25 categories that contained both sets of coefficients. Downwind and crosswind leeway coefficients were generated for an additional 38 leeway categories based on the estimates from standard error relationships.		
Title:	Report Number:	Accession Number:
Examination of Chesapeake Bay Observing System for Local Environmental Data for Coast Guard Operations (RDC 643)	CG-D-04-05	ADA431038
The effective conduct of many of the U.S. Coast Guard's (USCG) missions is strongly influenced by the availability of accurate information on local environmental conditions. As an example, in search and rescue (SAR) operations, pollutant/hazardous product spill response, as well as interdiction of Law Enforcement (LE) targets (migrants, contraband), planning and execution depend on knowledge of water current velocity at the location of the incident, and on forecasts over time-scales that may range from hours to days.		
Title:	Report Number:	Accession Number:
Global Incident Notification (GIN) Secondary Public Safety Answering Point (PSAP) Test and Evaluation	R&DC 594	
The number of cellular calls to 9-1-1 has been increasing every year with the increase in cellular telephones. There are currently over 50,000 emergency calls from cell phones a year. If the trend continues, cellular phones could become the source of the majority of all 9-1-1 calls. As the overall usage of cell phones to call 9-1-1 increases, the number of maritime 9-1-1 calls is also likely to increase. Acquisition of Search and Rescue (SAR)-relevant information can be streamlined by integrating the U.S. Coast Guard (CG) as a Secondary Public Safety Answering Point (PSAP) for marine distress cellular calls. In order to assess the pros and cons of Enhanced 9-1-1 (E9-1-1) integration with CG operations, the Research and Development Center established a prototype Secondary PSAP in Woods Hole, Massachusetts, monitored usage, and collected data on the calls handled during the 2004 SAR season.		